



HEALTH RISKS IN THE UNITED STATES

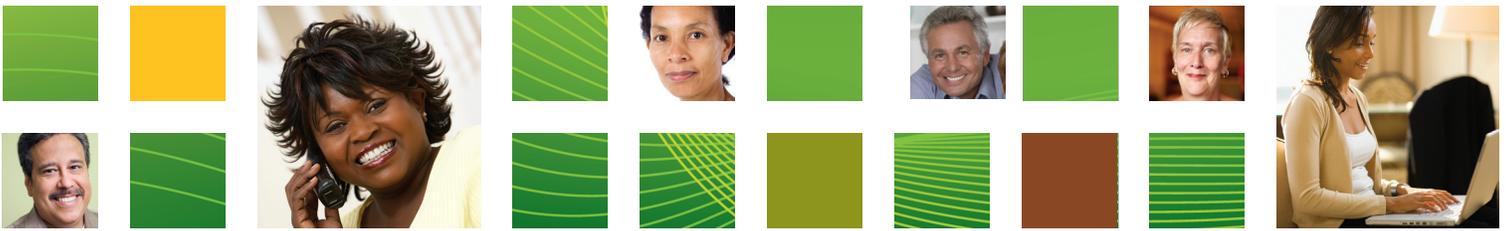
BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM

AT A GLANCE

2010

NATIONAL CENTER FOR CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION
IMPROVING HEALTH AND QUALITY OF LIFE FOR ALL PEOPLE





Measuring Health Risks Among Adults

For 25 years, CDC's Behavioral Risk Factor Surveillance System (BRFSS) has helped states survey U.S. adults to gather information about a wide range of behaviors that affect their health. The primary focus of these surveys has been on behaviors and conditions that are linked with the leading causes of death—heart disease, cancer, stroke, diabetes, and injury—and other important health issues. Examples of these behaviors and conditions include

- Not consuming enough fruits and vegetables.
- Being overweight.
- Not using seat belts.
- Using tobacco and alcohol.
- Not getting preventive medical care, such as flu shots, Pap smears, mammograms, and colorectal cancer screening tests.

Through the BRFSS surveys, communities, states, and federal agencies such as CDC have learned much about these and other health behaviors and conditions. This information is essential for planning, conducting, and evaluating public health programs at local, state, and national levels.

“The Behavioral Risk Factor Surveillance System is a critical instrument for analyzing and comparing health trends over time and across counties and states.”

LaTonya Bynum
Arkansas BRFSS Coordinator

A Unique State-Based Surveillance System

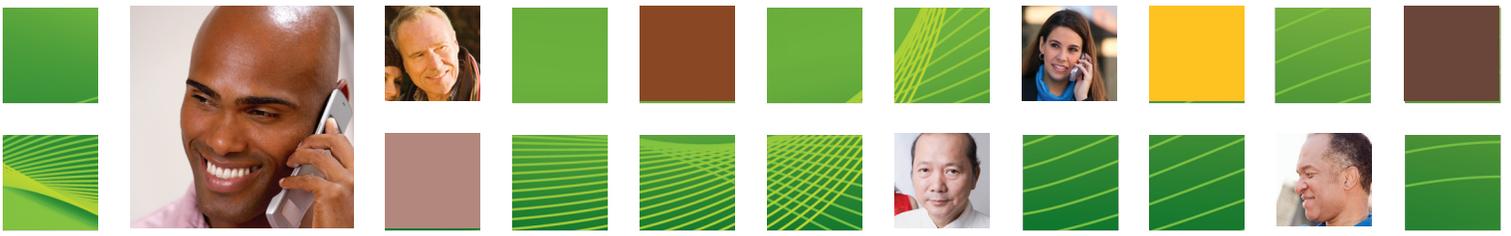
The BRFSS is a state-based system that is used to gather information through telephone surveys conducted by the health departments of all 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands, with help from CDC. The BRFSS is the world's largest continuously conducted telephone health surveillance system, which conducts more than 400,000 interviews per year.

States use BRFSS data to identify emerging health problems, establish health objectives and track their progress toward meeting these objectives, and develop and evaluate public health policies and programs designed to address identified problems. The BRFSS is the primary source of data for local entities, states, and the nation on the health-related behaviors of adults. States collect data through monthly telephone interviews with noninstitutionalized adults aged 18 years or older. BRFSS interviewers call both landlines and cell phones and ask respondents questions related to behaviors that are associated with preventable chronic diseases, injuries, and infectious diseases.

CDC works with states to ensure the success of the BRFSS. For example, CDC public health advisors provide technical assistance, and CDC epidemiologists help with survey

methodology and data analysis. To ensure that BRFSS data are of high quality, CDC generates a household calling list for each state, processes survey data, produces monthly and annual data quality reports, and provides online training for state BRFSS coordinators and interviewers. CDC also helps states develop resources to analyze, interpret, and use their survey data. State and local health departments rely on data from the BRFSS to

- Determine high-priority health issues; detect emerging health issues; and identify populations at highest risk for illness, disability, and death by analyzing data according to respondents' age, sex, education, income, and race/ethnicity.
- Develop strategic plans and targeted prevention activities and programs.
- Examine trends in behaviors over time to monitor the effectiveness of public health programs and progress in meeting prevention goals.
- Support community policies and programs that promote health and prevent disease—for example, by educating the public, the health community, and policy makers about disease prevention.



A Unique State-Based Surveillance System (continued)

Researchers, professional groups, managed care organizations, and community-based groups use BRFSS data to develop targeted prevention activities and programs. Public health professionals use the data to monitor the progress of the nation, states, and local areas toward meeting the health

objectives in *Healthy People 2010*. In addition, many countries, including China, Brazil, Mexico, Vietnam, Jordan, and Egypt, recognize the value of the BRFSS and have asked CDC to help them establish and evaluate similar surveillance systems.

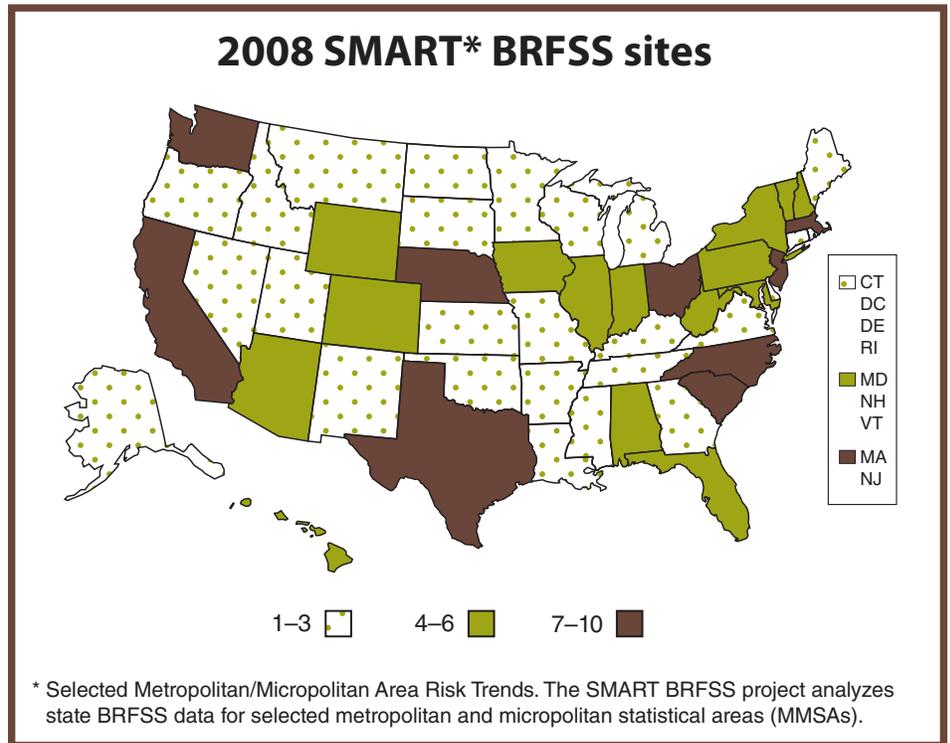
Versatility of the BRFSS

The BRFSS allows states the flexibility to add questions specific to their needs. At the same time, standard core questions on the survey enable health professionals to make comparisons among states and local areas and also to reach conclusions about the nation as a whole. BRFSS data also highlight state-to-state and territorial differences in key health issues. In 2008, for example, the percentage of adults who smoked ranged from 6.4% in the U.S. Virgin Islands to 27.4% in Guam.

BRFSS data also can be used to examine smaller geographic areas within states. For example, CDC has analyzed BRFSS data for more than 200 metropolitan and micropolitan statistical areas (MMSAs). The results of this analysis, which are available on a searchable Web site called Selected Metropolitan/Micropolitan Area Risk Trends (SMART) BRFSS, show that the prevalence of high-risk health behaviors varies substantially among MMSAs.

In areas analyzed for 2008,

- The prevalence of adults who smoke ranged from 4.9% in the Provo-Orem, Utah MMSA to 28.9% in the Hagerstown-Martinsburg, Maryland-West Virginia MMSA.
- The prevalence of having no health insurance ranged from 3.1% in the Cambridge-Newton-Framingham, Massachusetts MMSA to 39.5% in the El Paso, Texas MMSA.
- The prevalence of pneumonia vaccination among adults aged 65 years or older ranged from 45.6% in the Miami-Fort Lauderdale-Miami Beach, Florida MMSA to 81.8% in the Bangor, Maine MMSA.



The BRFSS also can be used to address urgent and emerging health issues in a particular area. States can add questions on a wide range of important health issues, such as diabetes, indoor air quality, anxiety and depression, folic acid consumption, and natural disasters.

For example, following the devastating effects of Hurricanes Katrina and Rita in 2005, Alabama, Florida, Louisiana, Mississippi, and Texas added an emergency module to assess the impact of these events. In 2009, the BRFSS added four modules to assess and monitor H1N1 flu—one module on flu-like illness among adults and children and three modules on H1N1 flu vaccination among adults, children, and health care workers.



BRFSS in Action

The BRFSS is addressing the challenges presented by a growing demand for survey data. One such challenge is to keep phone interviews to a reasonable length while meeting the demand for data on additional topics. To meet the many challenges, the BRFSS has increased the number of adults interviewed in each state. In 2008, for example, the average number of participants per state was 7,676, compared with 6,712 in 2006. This increase allows states to provide local data and to use split sampling, in which different portions of the sample population answer different sets of BRFSS questions. As a result, states can collect BRFSS data on a wider range of topics each year.

With the addition of the SMART BRFSS, CDC is able to provide data on specific risks for some communities. Another new resource is the BRFSS Maps interactive Web site, which graphically displays the prevalence of behavioral risk factors

at state and MMSA levels. This tool is revolutionizing the way people at local, state, and federal levels use BRFSS data by providing easy access to specific examples important to local communities. It is available at <http://www.cdc.gov/brfss>.

In 2007, the BRFSS added a Web-Enabled Analysis Tool (WEAT). This online application analyzes data through a variety of statistical methods. Users are able to run cross-tabulation and logistic regression. It is available at <http://www.cdc.gov/brfss>.

In 2009, the BRFSS implemented the Cell Phone Survey in all states and territories. By including cell phones in the survey, BRFSS is able to reach segments of the population that were previously inaccessible—those who have a cell phone but not a landline—and produce a more representative sample and higher quality data.

Future Directions

States and local areas will continue to rely on the BRFSS to gather the high-quality data they need to plan and evaluate public health programs and to allocate scarce resources. CDC will work closely with state and federal partners to ensure that the BRFSS continues to provide data that are useful for public health research and practice and for state and local health policy decisions. As telecommunication technology evolves, CDC is implementing the use of multimode data collection for the BRFSS. CDC also is working to make the BRFSS more representative by exploring new ways to reach hard-to-find populations. The challenge for the BRFSS is to effectively manage an increasingly complex surveillance system, while adapting to changes in communications technology, societal behaviors, and population diversity.

To address these challenges, the BRFSS plans to

- Design and conduct innovative pilot studies to advance the current BRFSS methodology and prepare to incorporate future methodologies, such as cell phone and mail surveys.

- Identify and address potential threats to the validity and reliability of BRFSS data that might affect survey participation and data quality.
- Expand the use of the system through special projects, such as rapid response surveillance efforts, and follow-up surveys of subpopulations identified by the BRFSS, such as people with asthma.
- Enhance estimates of the prevalence of chronic diseases and risk behaviors by including socioeconomic variables in the calculation of BRFSS data. These new variables will be in addition to variables such as age, race, and sex, which are already collected in the survey. Incorporating these new variables will result in changed estimates for some chronic diseases and risk behaviors. BRFSS will work with states to explain the resulting changes, which will be fully implemented in 2011.

**For more information, please contact the Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion
4770 Buford Highway NE, Mail Stop K-29, Atlanta, GA 30341-3717
Telephone: 800-CDC-INFO (232-4636) • TTY: 888-232-6348
E-mail: cdcinfo@cdc.gov • Web: <http://www.cdc.gov/brfss>**